Primus Power Corporation
Wind Firming EnergyFarm™

Project Description

Primus Power is deploying a 25MW/75MWh EnergyFarm™ in the Modesto Irrigation District (MID) in California' central valley that consists of an array of 250kW EnergyPods™; plug-and-play zinc-flow battery modules and power electronics systems housed inside ISO shipping containers. The modular design and operation will be field tested at Pacific Gas & Electric with support from Sandia National Laboratories and the Electric Power Research Institute. The 25MW EnergyFarm™ will displace a planned 50MW, $78M fossil plant to manage MID's increasing energy balancing requirements as use of renewables generation increases and loads become peakier. The system will be deployed incrementally in multiple substations to provide local-area voltage stability and defer substation upgrades in addition to its core generation-level energy balancing application. EnergyFarms are scalable in rapidly deployable increments of 250kW to systems larger than 100MW/300MWh..

Goals/Objectives

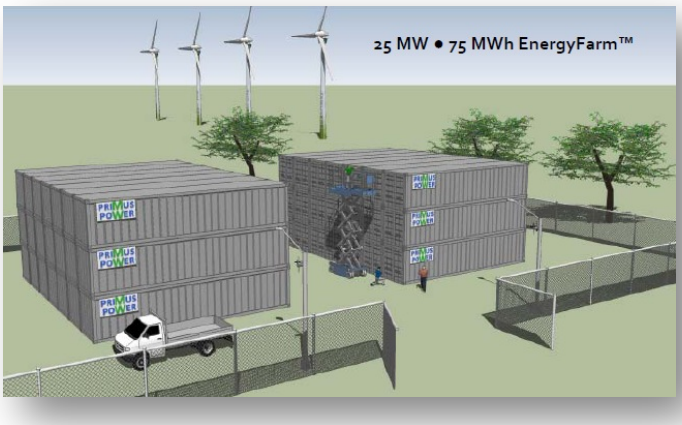
- ***Develop a distributed, mobile energy storage module based on a zinc-flow battery technology that can be mass produced***
- ***Reduce system capital costs and footprint***
- ***Enhance application flexibility***
- ***Validate module performance and functionality (greater than 75 percent efficiency)***

Key Milestones

- Beta EnergyPod™ testing (January 2012)
- EnergyPods™ 3rd Party Validation (December 2013)
- First production EnergyPods™ built (March 2014)
- Field-Commissioned first EnergyPods™ (August 2014)

Benefits

- Power costs reduced
- Renewable energy resource adoption accelerated
- Greenhouse gas emissions reduced
- Advanced battery manufacturing established in the U.S.



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PARTNERS

Modesto Irrigation District
California Energy Commission
Pacific Gas & Electric
Sandia National Laboratory
Electric Power Research Institute

PROJECT DURATION

01/1/10–01/31/15

BUDGET

Total Project Value
$46,700,000

DOE/Non-DOE Share
$14,000,000/$32,700,000

EQUIPMENT

Energy Pod™ Flow Battery Cells
Power Electronics/Inverter
Transformers

DEMONSTRATION STATES

California

CID: OE0000228

Managed by the National Energy Technology Laboratory for the Office of Electricity Delivery and Energy Reliability